

Jianzhong Zhang

List of Publications by Year in descending order

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113
papers

4,214
citations

101496

36
h-index

123376

61
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117
all docs

117
docs citations

117
times ranked

4905
citing authors

#	ARTICLE	IF	CITATIONS
1	In situ X-ray observations of the coesite-stishovite transition: reversed phase boundary and kinetics. <i>Physics and Chemistry of Minerals</i> , 1996, 23, 1.	0.3	283
2	A New Molybdenum Nitride Catalyst with Rhombohedral MoS ₂ Structure for Hydrogenation Applications. <i>Journal of the American Chemical Society</i> , 2015, 137, 4815-4822.	6.6	195
3	Microstrain and grain-size analysis from diffraction peak width and graphical derivation of high-pressure thermomechanics. <i>Journal of Applied Crystallography</i> , 2008, 41, 1095-1108.	1.9	166
4	Synthesis, Crystal Structure, and Elastic Properties of Novel Tungsten Nitrides. <i>Chemistry of Materials</i> , 2012, 24, 3023-3028.	3.2	154
5	New experimental observations on the anhydrous solidus for peridotite KLB-1. <i>Geochemistry, Geophysics, Geosystems</i> , 2000, 1, n/a-n/a.	1.0	132
6	Thermal equations of state of the β , β_2 , and γ phases of zirconium. <i>Physical Review B</i> , 2005, 71, .	1.1	113
7	Comparative compressibilities of calcite-structure carbonates; deviations from empirical relations. <i>American Mineralogist</i> , 1999, 84, 861-870.	0.9	112
8	Enhancement of fracture toughness in nanostructured diamond-SiC composites. <i>Applied Physics Letters</i> , 2004, 84, 1356-1358.	1.5	100
9	Pressure and temperature dependence of elastic wave velocity of MgSiO ₃ perovskite and the composition of the lower mantle. <i>Physics of the Earth and Planetary Interiors</i> , 2005, 151, 143-154.	0.7	99
10	Effect of solute segregation on the strength of nanocrystalline alloys: Inverse Hall-Petch relation. <i>Acta Materialia</i> , 2007, 55, 5007-5013.	3.8	91
11	Elasticity of (Mg _{0.83} ,Fe _{0.17})O ferropericlasite at high pressure: ultrasonic measurements in conjunction with X-radiation techniques. <i>Earth and Planetary Science Letters</i> , 2002, 203, 557-566.	1.8	88
12	Elasticity of single crystal and polycrystalline MgSiO ₃ perovskite by Brillouin spectroscopy. <i>Geophysical Research Letters</i> , 2004, 31, n/a-n/a.	1.5	86
13	A Novel Helical Double-Layered Cobalt(II) Organic Framework with Tetranuclear [Co ₄ (μ_3 -OH) ₂] Clusters Linked by an Unsymmetrical Pyridylbenzoate Ligand. <i>Inorganic Chemistry</i> , 2007, 46, 9021-9023.	1.9	84
14	Thermal equation of state of garnets along the pyrope-majorite join. <i>Physics of the Earth and Planetary Interiors</i> , 1998, 105, 59-71.	0.7	83
15	The Hardest Superconducting Metal Nitride. <i>Scientific Reports</i> , 2015, 5, 13733.	1.6	78
16	Experimental constraints on the phase diagram of elemental zirconium. <i>Journal of Physics and Chemistry of Solids</i> , 2005, 66, 1213-1219.	1.9	77
17	Pressure-Induced Cubic to Monoclinic Phase Transformation in Erbium Sesquioxide Er ₂ O ₃ . <i>Inorganic Chemistry</i> , 2007, 46, 6164-6169.	1.9	71
18	Elasticity of polycrystalline pyrope (Mg ₃ Al ₂ Si ₃ O ₁₂) to 9GPa and 1000°C. <i>Physics of the Earth and Planetary Interiors</i> , 2006, 155, 179-190.	0.7	68

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19	Stress-induced large Curie temperature enhancement in $\text{Fe}_{1-x}\text{Mn}_x$ alloy. Physical Review B, 2009, 80, .	1.1	65
20	Thermoelastic equation of state of jadeite $\text{NaAlSi}_2\text{O}_6$: An energy-dispersive Reitveld Refinement Study of low symmetry and multiple phases diffraction. Geophysical Research Letters, 1997, 24, 5-8.	1.5	63
21	Encapsulation kinetics and dynamics of carbon monoxide in clathrate hydrate. Nature Communications, 2014, 5, 4128.	5.8	62
22	Thermal equation of state of magnesiowüstite ($\text{Mg}_{0.6}\text{Fe}_{0.4}\text{O}$). Physics of the Earth and Planetary Interiors, 2002, 129, 301-311.	0.7	57
23	Hardness, elastic, and electronic properties of chromium monoboride. Applied Physics Letters, 2015, 106, .	1.5	54
24	Formation of zirconium metallic glass. Nature, 2004, 430, 332-335.	13.7	51
25	What is the theoretical density of a nanocrystalline material?. Acta Materialia, 2008, 56, 3663-3671.	3.8	51
26	Synthesis, Hardness, and Electronic Properties of Stoichiometric VN and CrN. Crystal Growth and Design, 2016, 16, 351-358.	1.4	50
27	Phase Transition and Compressibility in Silicon Nanowires. Nano Letters, 2008, 8, 2891-2895.	4.5	49
28	Strength Weakening by Nanocrystals in Ceramic Materials. Nano Letters, 2007, 7, 3196-3199.	4.5	48
29	Thermal equations of state for titanium obtained by high pressure-temperature diffraction studies. Physical Review B, 2008, 78, .	1.1	47
30	Experimental invalidation of phase-transition-induced elastic softening in CrN. Physical Review B, 2012, 86, .	1.1	47
31	Effect of Defects on the Elastic Properties of $\text{W}_{1-x}\text{Ti}_x$ stite. Physical Review Letters, 2000, 84, 507-510.	2.9	43
32	Nanocrystalline tungsten carbide: As incompressible as diamond. Applied Physics Letters, 2009, 95, .	1.5	41
33	First-principles prediction of mechanical properties of gamma-boron. Applied Physics Letters, 2009, 94, 191906.	1.5	40
34	Synthesis of Stoichiometric and Bulk CrN through a Solid-State Ion-Exchange Reaction. Chemistry - A European Journal, 2012, 18, 15459-15463.	1.7	39
35	Comparative studies of compressibility between nanocrystalline and bulk nickel. Applied Physics Letters, 2007, 90, 043112.	1.5	38
36	Pressure-Induced Amorphization and Phase Transformations in LiAlSiO_4 . Chemistry of Materials, 2005, 17, 2817-2824.	3.2	37

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37	Pressure-Driven Phase Transitions in NaBH ₄ : Theory and Experiments. Journal of Physical Chemistry B, 2007, 111, 13873-13876.	1.2	37
38	Simultaneous ultrasonic and synchrotron x-ray studies on pressure induced $\sqrt{3}$ phase transition in zirconium. Journal of Applied Physics, 2008, 104, .	1.1	36
39	Crystal structure and encapsulation dynamics of ice II-structured neon hydrate. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 10456-10461.	3.3	36
40	Enhancement of yield strength in zirconium metal through high-pressure induced structural phase transition. Applied Physics Letters, 2007, 91, .	1.5	35
41	Thermal equation of state of rhenium diboride by high pressure-temperature synchrotron x-ray studies. Physical Review B, 2008, 78, .	1.1	35
42	Elasticity of $\sqrt{3}$ -phase zirconium. Physical Review B, 2007, 76, .	1.1	34
43	Thermomechanics of Nanocrystalline Nickel under High Pressure-Temperature Conditions. Nano Letters, 2007, 7, 426-432.	4.5	33
44	Nanoscale twinning-induced elastic strengthening in silicon carbide nanowires. Scripta Materialia, 2010, 63, 981-984.	2.6	33
45	High pressure-high temperature synthesis of lithium-rich Li ₃ O(Cl, Br) and Li ₃ xCa _x /2OCl anti-perovskite halides. Inorganic Chemistry Communication, 2014, 48, 140-143.	1.8	33
46	Thermal equation of state of silicon carbide. Applied Physics Letters, 2016, 108, .	1.5	33
47	High-temperature phase transitions in CsH ₂ PO ₄ under ambient and high-pressure conditions: A synchrotron x-ray diffraction study. Journal of Chemical Physics, 2007, 127, 194701.	1.2	31
48	In situ neutron diffraction study of deuterated portlandite Ca(OD) ₂ at high pressure and temperature. Physics and Chemistry of Minerals, 2007, 34, 223-232.	0.3	30
49	The strength of moissanite. American Mineralogist, 2002, 87, 1005-1008.	0.9	29
50	Constitutive Law and Flow Mechanism in Diamond Deformation. Scientific Reports, 2012, 2, 876.	1.6	29
51	Synthesis of Onion-Like $\sqrt{3}$ -MoN Catalyst for Selective Hydrogenation. Journal of Physical Chemistry C, 2017, 121, 19451-19460.	1.5	29
52	Pressure induced structural changes in the potential hydrogen storage compound ammonia borane: A combined X-ray, neutron and theoretical investigation. Chemical Physics Letters, 2010, 495, 203-207.	1.2	28
53	Experimental constraints on the phase diagram of titanium metal. Journal of Physics and Chemistry of Solids, 2008, 69, 2559-2563.	1.9	27
54	Phase-Transition Induced Elastic Softening and Band Gap Transition in Semiconducting PbS at High Pressure. Inorganic Chemistry, 2013, 52, 8638-8643.	1.9	27

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55	Impurity effects on the phase transformations and equations of state of zirconium metals. <i>Journal of Physics and Chemistry of Solids</i> , 2007, 68, 2297-2302.	1.9	26
56	Sulfur-catalyzed phase transition in MoS ₂ under high pressure and temperature. <i>Journal of Physics and Chemistry of Solids</i> , 2014, 75, 100-104.	1.9	26
57	Thermal equation of state of copper studied by high P-T synchrotron x-ray diffraction. <i>Applied Physics Letters</i> , 2009, 94, .	1.5	25
58	Revisit of Pressure-Induced Phase Transition in PbSe: Crystal Structure, and Thermoelastic and Electrical Properties. <i>Inorganic Chemistry</i> , 2015, 54, 4981-4989.	1.9	25
59	Variable pressure-temperature neutron diffraction of w ^{1/4} stite (Fe _{1-x} O): Absence of long-range magnetic order to 20GPa. <i>Applied Physics Letters</i> , 2005, 86, 052505.	1.5	24
60	High-pressure neutron diffraction studies at LANSCE. <i>Applied Physics A: Materials Science and Processing</i> , 2010, 99, 585-599.	1.1	24
61	Strain stiffening, high load-invariant hardness, and electronic anomalies of boron phosphide under pressure. <i>Physical Review B</i> , 2020, 101, .	1.1	24
62	Yield strength enhancement of MgO by nanocrystals. <i>Journal of Materials Science</i> , 2005, 40, 5763-5766.	1.7	22
63	Superhard diamond/tungsten carbide nanocomposites. <i>Applied Physics Letters</i> , 2011, 98, .	1.5	22
64	Thermal equations of state and phase relation of PbTiO ₃ : A high P-T synchrotron x-ray diffraction study. <i>Journal of Applied Physics</i> , 2011, 110, 084103.	1.1	22
65	High-temperature crystal structures and chemical modifications in RbH ₂ PO ₄ . <i>Journal of Physics Condensed Matter</i> , 2009, 21, 325401.	0.7	21
66	High Pressure Phase-Transformation Induced Texture Evolution and Strengthening in Zirconium Metal: Experiment and Modeling. <i>Scientific Reports</i> , 2015, 5, 12552.	1.6	21
67	Anisotropic elasticity of jarosite: A high-P synchrotron XRD study. <i>American Mineralogist</i> , 2010, 95, 19-23.	0.9	20
68	Unusual Mott transition in multiferroic PbCrO ₃ . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 15320-15325.	3.3	18
69	In situ phase transition study of nano- and coarse-grained TiO ₂ under high pressure/temperature conditions. <i>Journal of Physics Condensed Matter</i> , 2008, 20, 125224.	0.7	17
70	High-temperature neutron diffraction study of deuterated brucite. <i>Physics and Chemistry of Minerals</i> , 2013, 40, 799-810.	0.3	17
71	Pressure-induced long-range magnetic ordering in cobalt oxide. <i>Physical Review B</i> , 2006, 74, .	1.1	16
72	Pressure-induced reversal between thermal contraction and expansion in ferroelectric PbTiO ₃ . <i>Scientific Reports</i> , 2014, 4, 3700.	1.6	16

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73	Elastic properties of yttrium-doped BaCeO ₃ perovskite. Applied Physics Letters, 2007, 90, 161903.	1.5	15
74	Comparative studies of constitutive properties of nanocrystalline and bulk iron during compressive deformation. Acta Materialia, 2011, 59, 3384-3389.	3.8	15
75	Compressibility and pressure-induced amorphization of guest-free melanophlogite: An in-situ synchrotron X-ray diffraction study. American Mineralogist, 2007, 92, 166-173.	0.9	14
76	Development of high P-T neutron diffraction at LANSCE "toroidal anvil press, TAP-98, in the HiPPo diffractometer. , 2005, , 461-474.		12
77	High pressure synchrotron x-ray diffraction studies of superprotonic transitions in phosphate solid acids. Solid State Ionics, 2012, 213, 58-62.	1.3	12
78	Unusual structural evolution in KCuF ₃ at high temperatures by neutron powder diffraction. Physical Review B, 2013, 87, .	1.1	12
79	In Situ Time-Resolved Phase Evolution and Phase Transformations in U-6Wt%Nb. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 2619-2628.	1.1	12
80	Grain size effects on the compressibility and yield strength of copper. Journal of Physics and Chemistry of Solids, 2013, 74, 75-79.	1.9	11
81	Temperature and pressure effects of multiferroic Bi ₂ NiTiO ₆ compound. Journal of Applied Physics, 2013, 113, .	1.1	11
82	Porous Ice Phases with VI and Distorted VII Structures Constrained in Nanoporous Silica. Nano Letters, 2014, 14, 6554-6558.	4.5	11
83	Effects of defect and pressure on the thermal expansivity of Fe _x O. Physics and Chemistry of Minerals, 2005, 32, 241-247.	0.3	10
84	Equations of state and phase transformation of depleted uranium DU-238 by high pressure-temperature diffraction studies. Physical Review B, 2007, 75, .	1.1	10
85	Thermal equation of state and thermodynamic Grüneisen parameter of beryllium metal. Journal of Applied Physics, 2013, 114, .	1.1	10
86	High-T Nano-Mechanics of Polycrystalline Nickel. Nanoscale Research Letters, 2007, 2, 476-91.	3.1	9
87	Thermal equations of state and melting of lithium deuteride under high pressure. Journal of Applied Physics, 2008, 103, .	1.1	9
88	A new lithium-rich anti-spinel in Li-O-Br system. Chemical Communications, 2015, 51, 9666-9669.	2.2	9
89	Equation of state, phase stability, and phase transformations of uranium-6 wt.% niobium under high pressure and temperature. Journal of Applied Physics, 2018, 123, .	1.1	9
90	Thermal equation of state of TiC: A synchrotron x-ray diffraction study. Journal of Applied Physics, 2010, 107, .	1.1	8

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91	The lattice parameter a_c composition relationship of the body centered cubic uranium-niobium alloys. Journal of Nuclear Materials, 2020, 542, 152493.	1.3	8
92	Comparative studies of yield strength and elastic compressibility between nanocrystalline and bulk cobalt. Journal of Applied Physics, 2012, 111, .	1.1	7
93	Local structural distortion and electrical transport properties of Bi(Ni _{1/2} Ti _{1/2})O ₃ perovskite under high pressure. Scientific Reports, 2016, 5, 18229.	1.6	7
94	Structural disorder, sublattice melting, and thermo-elastic properties of anti-perovskite Li ₃ OBr under high pressure and temperature. Applied Physics Letters, 2020, 117, .	1.5	7
95	Interactive visualization of multi-data-set Rietveld analyses using Cinema:Debye-Scherrer. Journal of Applied Crystallography, 2018, 51, 943-951.	1.9	7
96	Anomalous Surface Doping Effect in Semiconductor Nanowires. Journal of Physical Chemistry C, 2017, 121, 11824-11830.	1.5	6
97	Equation of state and phase evolution of U-7Nb with implications for the understanding of dynamic behavior of U-Nb alloys. Applied Physics Letters, 2019, 114, .	1.5	6
98	Phase Stability and Compressibility of 3R-MoN ₂ at High Pressure. Scientific Reports, 2019, 9, 10524.	1.6	5
99	Nuclear and charge density distributions in ferroelectric PbTiO ₃ : maximum entropy method analysis of neutron and X-ray diffraction data. Powder Diffraction, 2013, 28, 276-280.	0.4	4
100	Neutron diffraction study of crystal structure and temperature driven molecular reorientation in solid \pm -CO. AIP Advances, 2020, 10, 045301.	0.6	4
101	Improper multiferroiclike transition in a metal. Physical Review B, 2022, 105, .	1.1	4
102	Equation of state and thermodynamic Grüneisen parameter of monoclinic 1,1-diamino-2,2-dinitroethylene. Journal of Physics Condensed Matter, 2016, 28, 395402.	0.7	3
103	High pressure neutron and synchrotron X-ray diffraction studies of tetragonal LaFeAsO _{0.9} F _{0.1} . High Pressure Research, 2012, 32, 405-411.	0.4	2
104	New exploration on phase transition and structure of PbS under high pressure and temperature. Journal of Applied Physics, 2013, 113, 043509.	1.1	2
105	Compressive-tensile deformation of nanocrystalline nickel at high pressure and temperature conditions. Applied Physics Letters, 2013, 103, 043118.	1.5	2
106	Equation of state and strain-induced stabilization of $\hat{\Gamma}$ -phase stabilized plutonium alloys. Journal of Nuclear Materials, 2019, 524, 54-59.	1.3	2
107	Line profile analysis of dislocation densities of the $\hat{\Gamma}$ -phase ²³⁹ Pu-2.0at%Ga alloy using neutron diffraction. Journal of Nuclear Materials, 2019, 517, 152-156.	1.3	2
108	Compressibility and thermoelasticity of CrN. High Pressure Research, 2020, 40, 423-433.	0.4	2

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109	Time-resolved phase and compositional homogenization of segregated uranium-niobium alloys above the monotectoid temperature. <i>Journal of Nuclear Materials</i> , 2022, 564, 153673.	1.3	2
110	Pressure-induced shear-mode elastic softening in orthorhombic BaCe _{0.85} Y _{0.15} O _{2.925} perovskite. <i>High Pressure Research</i> , 2008, 28, 415-421.	0.4	1
111	Strength measurement of boron suboxide B ₆ O at high pressure and temperature using in situ synchrotron X-ray diffraction. <i>High Pressure Research</i> , 2008, 28, 423-430.	0.4	1
112	Formation of Zirconium Metallic Glass.. <i>ChemInform</i> , 2004, 35, no.	0.1	0
113	Synthesis and Characterization of NanoComposite Superhard Materials. <i>Materials Research Society Symposia Proceedings</i> , 2006, 987, 1.	0.1	0